American Standard
HEATING & AIR CONDITIONING

ACONT900AC43UA

COMFORT CONTROL - 4 HEAT (GAS, OIL*, OR ELECTRIC)/3 COOL/HEAT PUMP COMMUNICATING PROGRAMMABLE 3 WIRE HOOKUP

INSTALLER'S GUIDE

ALL phases of this installation must comply with NATIONAL, STATE, AND LOCAL CODES

NOTE: If this control is replacing a control that contains mercury in a sealed tube, do not place your old control in the trash. Dispose of properly.

NOTE: Contact your local waste management authority for instructions regarding recycling and the proper disposal of an old control.

INTRODUCTION

The ACONT900AC43UA is a communicating programmable Comfort Control that supports single-stage or multi-stage heat/cool and heat pump applications. It is a wall mounted, low voltage (24VAC) communicating Comfort Control with backlit LCD and a touch screen display. Room temperature is maintained by controlling the operation of heating, cooling, heat pump, and dual fuel systems via digital, 2-way communications. The Comfort Control will communicate with and identify all AccuLink^{TM} components in the system. It is easily manually configured via the user friendly Installer Setup menu. The Comfort Control features include separate heating and cooling setpoints, selectable auto or manual changeover, menu driven 7-day programming, adjustable filter reminders, and outdoor temperature sensing. Setup selections and diagnostics are stored indefinitely in the Comfort Control's nonvolatile memory eliminating the need for battery backup.

Table 1. ACONT900AC43UA Comfort Control

Power Method	Changeover	System Selection and Fan Keys*	Fan Selection	Comments
24 Vac common wire	Automatic or Manual selectable	Heat-Off-Cool-Auto Emergency Heat	On-Auto-Circ	System and Fan selection vary, based on system type
				Humidity sensor to control dehumidification and humidification

* See System and Fan Keys section for specific information.

Accessories

Optional

BAYSEN01ATEMPA - Outdoor Sensor - For use with communicating outdoor equipment
BAYTAM00AC00UA - Telephone Access Module (TAM)

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PRODUCT SPECIFICATIONS

Power Source:	18-30 VAC, Class II, 50/60Hz
Storage Range:	-30°F-150°F (-34.4°C-65.6°C), 5%-90% RH non-condensing
Operating Temperature Range:	0°F-120°F (-17.8°C-37.2°C), 5%-90% RH non-condensing
System Mode:	Heat, Cool, Auto, Emergency Heat, and Off
Fan Mode:	On, Auto, and Circ
Cooling Setpoint Temperature Range:	60°F-99°F (15.5°C-37.0°C), 1°F (0.5°C) resolution
Heating Setpoint Temperature Range:	50°F-90°F (10°C-32.0°C), 1°F (0.5°C) resolution
Indoor Temperature Display Range:	40°F-99°F (4.5°C-37.0°C)
Outdoor Temperature Display Range:	-40°F-127°F (-40°C-53.0°C)
Indoor Humidity Display Range:	0%-99%, 1% resolution
Minimum Cycle Off Time Delay:	Compressor: 5 minutes
	Heat: 0 minutes

This comfort control contains a Lithium battery which may contain Perchlorate material. Due to State Law in California, the following statement is required:

Perchlorate Material - special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate

INSTALLATION

When Installing this Product...

1. Read these instructions carefully. Failure to follow these instructions can damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After completing installation, use these instructions to check out the product operation.

⚠ WARNING

Voltage Hazard. Can cause electrical shock or equipment damage.
Disconnect power before beginning installation.

Location

Install the Comfort Control about 5 ft. (1.5m) above the floor in an area with good circulation at average temperature. See Figure 1.

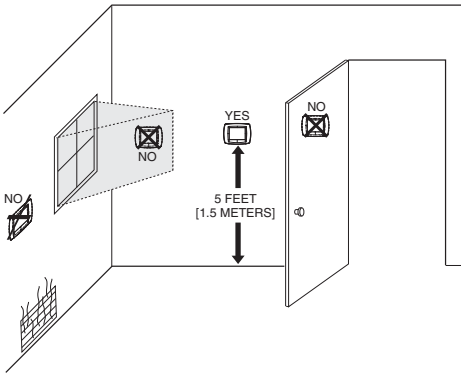

Fig. 1. Selecting Comfort Control Location

Do not install the Comfort Control where it can be affected by:

- drafts or dead spots behind doors and in corners.
- hot or cold air from ducts.
- radiant heat from sun or appliances.
- concealed pipes and chimneys.
- unheated (uncooled) areas such as an outside wall behind the Comfort Control.

Sub-base Installation

The Comfort Control can be mounted horizontally on the wall or on a 2 in. by 4 in. wiring box. Position sub-base horizontally on the wall or on a 2 in. by 4 in. wiring box.

1. Turn OFF all power to heating and coolingequipment.
2. If an existing Comfort Control is being replaced:
   a. Remove existing Comfort Control from wall.
   b. Disconnect wires from existing control, one at a time. Be careful not to allow wires to fall back into wall.
   c. As each wire is disconnected, record wire color and terminal marking.
   d. Discard or recycle old Comfort Control.
3. Separate the Comfort Control from the subbase to expose mounting holes.
4. Position and level the sub-base wallplate (for appearance only). The Comfort Control functions properly even when not level.
5. Use a pencil to mark the mounting holes.
6. Remove the sub-base from the wall and drill two 3/16 in. holes in the wall (if drywall) as marked. For firmer material such as plaster, drill two 7/32 in. holes. Gently tap anchors (provided) into the drilled holes until flush with the wall.
7. Position the sub-base over the holes, pulling the wires through the wiring opening.
8. Insert the mounting screws in the holes and tighten.

Wiring

All wiring must comply with local electrical codes and ordinances. See Figures 2 and 3 wiring diagrams for specific equipment applications. Refer to Table 2 for terminal designations.

⚠ WARNING

Voltage Hazard. Can cause electrical shock or equipment damage.
Disconnect power before beginning installation

NOTE: The maximum total cable length for the entire Comfort Control communicating system is 500 feet 18 AWG. The maximum distance of any single cable from a transformer is 250 feet 18 AWG.

1. Loosen the terminal screws on the sub-base. Insert wires into the terminal block next to the loosened screw. See Figure 4.

IMPORTANT
Use 18-gauge color-coded Comfort Control cable for proper wiring. Shielded cable is not typically required. Keep this wiring at least one foot away from large inductive loads such as Electronic Air Cleaners, motors, line starters, lighting ballasts and large distribution panels. Failure to follow these wiring practices may introduce electrical interference (noise) which can cause erratic system operation. All unused Comfort Control wire to be grounded at indoor unit chassis ground only. Shielded cable may be required if the above wiring guidelines cannot be met. Ground the shield only to the system chassis.

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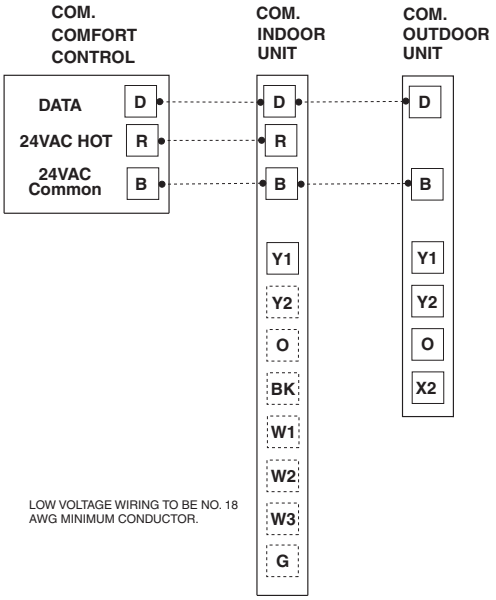

Fig. 2. Field Wiring Diagram, Communicating Indoor Unit - Communicating Outdoor Unit

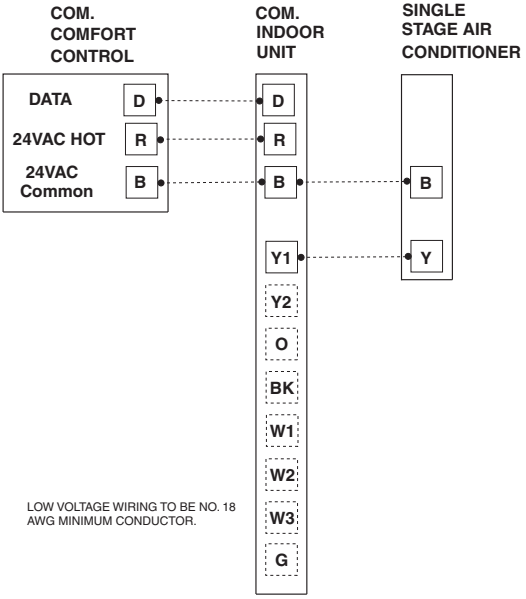

Fig. 3. Field Wiring Diagram, Communicating Indoor Unit - Single Stage Cooling Unit

2. Securely tighten each terminal screw.
3. Push excess wire back in the hole.
4. Plug the hole in the wall with nonflammable insulation to help prevent drafts from adversely affecting Comfort Control operation.

Table 2. Terminal Designations

Terminal Designations	Function
D	Data
R	Power - 24 Vac (hot)
B	Power - 24 Vac (Common)

Mounting Comfort Control on Sub-base

NOTE: To remove the Comfort Control from the wall, pull straight out.

1. Align the terminal screw block with the pins on the back of the Comfort Control.
2. Push the Comfort Control straight onto the wallplate. See Figure 4.
3. Perform installation of all other system equipment.

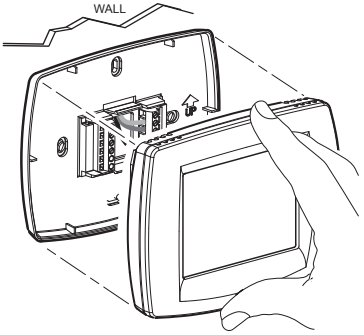

Fig. 4. Comfort Control

4. Turn ON power to the heating and cooling equipment.

INITIAL POWER-UP

Power-Up Sequence

The AccuLink™ communicating Comfort Control will communicate and identify all AccuLink™ components in the system.

Discovery Mode

Discovery mode begins when AccuLink™ communicating Comfort Control is first installed and power is connected. For communicating equipment, the Comfort Control automatically configures the equipment type, number of stages, cycle rates for each stage, and compressor stage ratios based on the information it received during Discovery mode.

NOTE: While in Discovery mode, the LED indicator located in the upper right corner of the Comfort Control will be illuminated.

NOTE: All discovered values will be saved into memory. If a communicating device goes missing (Err 89) or changes in value (Err 126) the error will be broadcast to the comfort control screen. (Restoring communications will clear this error or see ISU 0706 to reset the system configuration).

NOTE: The communicating Comfort Control can be reset (ISU 0710) to factory default settings.

NOTE: If no equipment is connected during the Auto-Discovery process, the system mode will be stuck at “OFF” and no equipment will run.

NOTE: To change the default/discovery settings, enter the Installer Setup menu (see Table 4) and select the desired item.

NOTE: Only ISU settings with an “E” will be Auto-Discovered. Manually changing an ISU setting to an option other than “E” disables Discovery mode for that ISU setting.

NOTE: See Table 3 for default cycle rate settings.

Table 3. Typical Cycle Rate Settings

System	Cycles Per Hour
Steam, Gravity	1
Hydronic Heat, Condensing Gas Furnaces, Compressor Stages	3
Gas or Oil Forced Air, Auxiliary Heat	5
Electric Heat, Emergency Heat	9

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1. Communicating Indoor Unit - Communicating Outdoor Unit

For a fully communicating system, the communicating Comfort Control will automatically configure the indoor and outdoor equipment configuration and cycle rates for each stage. See Figure 2.

2. Communicating Indoor Unit - Single Stage Cooling Unit

For a partially communicating system, the communicating Comfort Control will automatically configure the indoor equipment configuration and cycle rates for each stage. See Figure 3.

NOTE: The outdoor equipment configuration will default to a single stage cooling unit.

ADJUSTING REAL TIME CLOCK

Setting Calendar and Time

Locate and remove the tab labeled “Remove” in the lower left corner on the Comfort Control back. The tab must be removed to activate the real-time clock. See Figure 5.

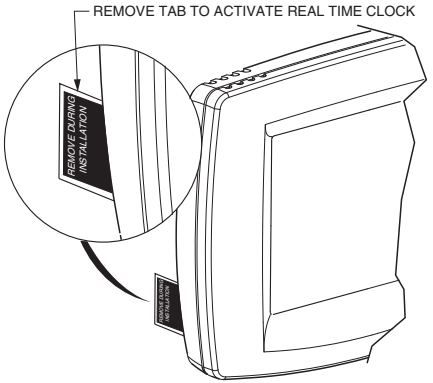

Fig. 5. Clock Activation

NOTE: If the system is not powered, the Real Time Clock battery life is approximately 20 weeks.

The Comfort Control is designed to automatically keep the current time and day in memory for up to ten years under normal use once calendar is set. When the Comfort Control is powered, the display is ready for the calendar date to be entered. See Figure 6.

1. Use the arrow keys to set the Year, Month and Day, as shown in Figure 6.
2. Press the Done key.
3. Use the arrow keys to set the current time. See Figure 6.
4. Press the Done key.

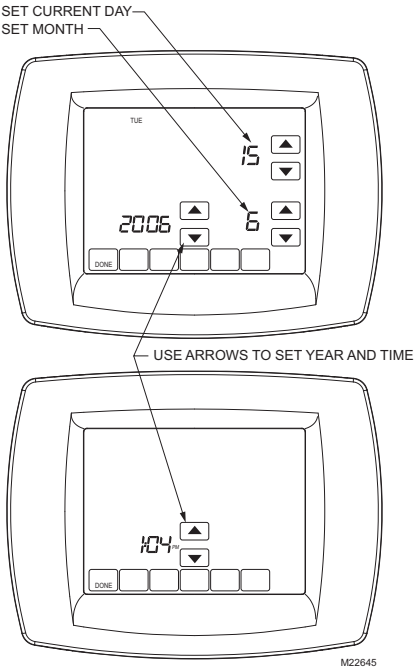

Fig. 6. Control Time and Date Settings

INSTALLER SETUP (ISU)

The Comfort Control works with many different system types. The installer can use the Installer Setup menu to change factory settings to customize installations. See Table 4.

Entering Installer Setup

Follow these steps to enter the Installer Setup:

1. Be sure the Comfort Control is powered.

NOTE: If necessary, press the Done key to return to the home screen.

2. Press and release the system key.
3. Press and hold the two blank keys on either side of the center key for approximately five seconds until screen changes. See Figure 7.
4. Release the two blank keys when the screen on the Comfort Control matches the screen in Figure 8.
5. See Figure 8 to review how the Comfort Control keys are used during Installer Setup. See Table 4 for the Installer Setup Numbers and Settings.
6. Press the Done key to exit the Installer Setup-screen.

NOTE: Manually changing an ISU setting to an option other than “E” disables Discovery mode for that ISU setting. If power is lost, all custom settings are retained in the memory.

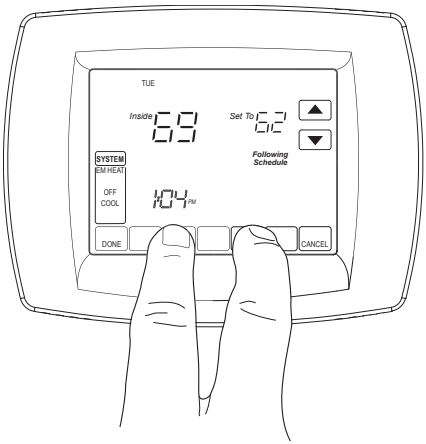

Fig. 7. Entering Installer Setup

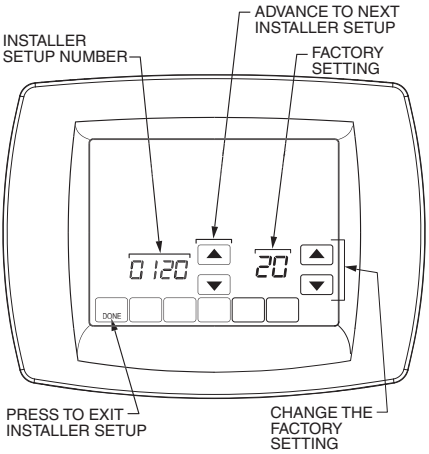

Fig. 8. Installer Setup Start Screen

Table 4. Installer Setup Menu

Selection	Installer Setup Number (ISU)	Factory Setting	Choices		Comments
			Option	Description	
Date (Year Upper)	0120	20	20, 21	Select the first two digits of current calendar year (20 for 2007)	2001-2178 available.
Date (Year Lower)	0130	06	00-99	Select the last two digits of current calendar year (07 for the year 2007)	2001-2178 available.
Date (Month)	0140		1-12	Select number that represents current calendar month	
Date (Day)	0150		1-31	Select number that represents current calendar date	

Table 4. Installer Setup Menu

Selection	Installer Setup Number (ISU)	Factory Setting	Choices		Comments
			Option	Description	
Schedule Options	0160	4	0, 4	0 - Non-programmable 4 - 7 Day programmable	When ISU0160 is changed from 0 (non-programmable to 4 (programmable), “Permanent Hold” will display under the time icon. This goes away when the schedule key is hit or when the schedule menu is entered.
Restore Energy Star Schedule	0165	0	0, 1	0 - No 1 - Resets the schedule to default Energy Star	No ISU or USU settings affected.
System Selection	0172	E	E, 1-3	E - Auto-Discover 1 - Heat/Cool 2 - Heat Pump 3 - Heat Only (no fan)	If no equipment is connected during the Auto-Discovery process, the system mode will be stuck at “off” and no equipment will run.
Compressor Stages	0174	E	E, 0-2	E - Auto-Discover 0 - None 1 - Single Stage 2 - Two Stage/Two Step	A minimum of 1H or 1C is required.
Heater Stages	0176	E	E, 0-3	E - Auto-Discover 0 - None 1 - Single Stage 2 - Two Stage 3 - Three stage	A minimum of 1H or 1C is required.
Fan Operation	0180	E	E, 0, 1	E - Auto-Discover 0 - Equipment controls fan operation in heat mode (fossil). 1 - Comfort Control controls fan operation in heat mode (electric).	Only seen if ISU 0172 is set to 1.
Indoor Unit Type	0181	E	E, 0, 1	E - Auto-Discover 0 - Non-variable Speed 1 - Variable Speed	
Compressor Low Stage Airflow	0182	E 2 Stage = 50% 2 Step = 80%	E, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80	E - Auto-Discover, 25% - 80% in 5% increments	Only shown for variable speed indoor units. Options may vary based on actual system installed.
Compressor Stage 2 Airflow	0183	100%	100	Not Auto-discovered	Only shown for variable speed indoor units. Options may vary based on actual system installed.
Heat Pump Warm Air Discharge	0185	0	0, 1	0 - Disabled = 100% 1 - Enabled = 80%	Only shown for variable speed indoor units.
Continuous Fan Airflow	0186	50	25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100	25% - 100% in 5% increments	Only shown for variable speed indoor units.

Table 4. Installer Setup Menu

Selection	Installer Setup Number (ISU)	Factory Setting	Choices		Comments
			Option	Description	
Backup Heat source (Aux heat)	0200	E	E, 0, 1	E - Auto-Discover 0 - Electric 1 - Fossil	HP only
1st Stage Compressor Cycles Per Hour (CPH)	0220	E	E, 2-6	E - Auto-Discover 2 - 6 is available; (3 is recommended)	Default value is 3 CPH if nothing is discovered.
2nd Stage Compressor Cycles Per Hour (CPH)	0230	E	E, 2-6	E - Auto-Discover 2 - 6 is available; (3 is recommended)	Default value is 3 CPH if nothing is discovered.
1st Stage Heater Cycles Per Hour (CPH)	0240	E	E, 2-6	E - Auto-Discover 2 - 6 is available; (3 is recommended)	Default value is 3 CPH if nothing is discovered.
2nd Stage Heater Cycles Per Hour (CPH)	0250	E	E, 2-6	E - Auto-Discover 2 - 6 is available; (5 is recommended)	Default value is 5 CPH if nothing is discovered.
3rd Stage Heater Cycles Per Hour (CPH)	0260	E	E, 2-6	E - Auto-Discover 2 - 6 is available; (5 is recommended)	Default value is 5 CPH if nothing is discovered.
Continuous Backlit	0280	0	0, 1	0 - Backlit not on continuously. Comfort Control backlight comes on with a key press. 1 - Backlit is on continuously. Comfort Control backlight will come on full brightness with a key press and display will dim 45 seconds after the last keypress.	
Changeover	0300	1	0, 1	0 - Manual Changeover 1 - Auto Changeover	
Deadband	0310	3	3-9	3 - 3°F (2.0°C) 4 - 4°F (2.5°C) 5 - 5°F (3.0°C) 6 - 6°F (3.5°C) 7 - 7°F (4.0°C) 8 - 8°F (4.5°C) 9 - 9°F (5.0°C)	Shown only if automatic changeover is selected. If ISU 0380 is set to Integrated Temperature and Humidity Control (ITHC), the deadband is restricted to a range of 5 to 9.
Temperature Indication Scale	0320	0	0, 1	0 - Temperature is displayed in °F 1 - Temperature is displayed in °C	
Daylight Savings	0330	2	0, 1, 2, 3	0 - Daylight savings is disabled. 1 - Daylight savings is enabled (US 1987) 2 - Daylight savings is enabled (US 2007) 3 - Daylight savings is enabled (Europe)	Set to 0 for areas that do not follow daylight savings.
Outdoor Temperature Sensor	0342	E	E, 0, 1	E - Auto-Discover 0 - None 1 - Installed Sensor	All communicating outdoor units are equipped with an ambient temperature sensor that will be auto-discovered

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Table 4. Installer Setup Menu

Selection	Installer Setup Number (ISU)	Factory Setting	Choices		Comments
			Option	Description	
Dual Fuel Heat Pump Control	0345	1	0, 1, 2	0 - Compressor lockout only 1 - Heat Pump Compressor lockout and failed to maintain heat protection 2 - Heat Pump Compressor lockout and Auxiliary Heat lockout and Failed to maintain heat protection in between. To access aux heat lockout, select option 2.	If compressor is “Failing to maintain heat”, revert to aux heater above balance point.
Dual Fuel Heat Pump Upstage to Furnace Timer	0346	60	0, 30, 45, 60, 75	0 - Disabled 30 - 30 minutes 45 - 45 minutes 60 - 60 minutes 75 - 75 minutes	System will switch to gas furnace to satisfy call for heat if second stage compressor timer expires.
Heat Pump Compressor Lockout Outdoor Temperature	0350	0, 40 (dual fuel)	0, 5 - 60	0 - No compressor lockout 5 - 5°F (-15.0°C) 10 - 10°F (-12.0°C) 15 - 15°F (-9.5°C) 20 - 20°F (-6.5°C) 25 - 25°F (-4.0°C) 30 - 30°F (-1.0°C) 35 - 35°F (1.5°C) 40 - 40°F (4.5°C) 45 - 45°F (7.0°C) 50 - 50°F (10.0°C) 55 - 55°F (13.0°C) 60 - 60°F (15.5°C)	System will switch to gas furnace to satisfy call for heat if the highest compressor stage, continuous-run timer expires.
Auxiliary Heat Lockout Outdoor Temperature	0360	0	0, 5 - 65	0 - No auxiliary heat lockout 5 - 5°F (-15.0°C) 10 - 10°F (-12.0°C) 15 - 15°F (-9.5°C) 20 - 20°F (-6.5°C) 25 - 25°F (-4.0°C) 30 - 30°F (-1.0°C) 35 - 35°F (1.5°C) 40 - 40°F (4.5°C) 45 - 45°F (7.0°C) 50 - 50°F (10.0°C) 55 - 55°F (13.0°C) 60 - 60°F (15.5°C) 65 - 65°F (18.5°C)	Not available for dual fuel unless option 2 is selected in ISU#0345. Default will be 50 in this case.
1st Stage Heater Defrost Balance Point	0361	0	0, 5 - 55	0 - Disabled 5 - 5°F (-15.0°C) 10 - 10°F (-12.0°C) 15 - 15°F (-9.5°C) 20 - 20°F (-6.5°C) 25 - 25°F (-4.0°C) 30 - 30°F (-1.0°C) 35 - 35°F (1.5°C) 40 - 40°F (4.5°C) 45 - 45°F (7.0°C) 50 - 50°F (10.0°C) 55 - 55°F (13.0°C)	Only shown if outdoor temperature is available.

Table 4. Installer Setup Menu

Selection	Installer Setup Number (ISU)	Factory Setting	Choices		Comments
			Option	Description	
2nd Stage Heater Defrost Balance Point	0362	40	0, 5 - 55	0 - Disabled 5 - 5°F (-15.0°C) 10 - 10°F (-12.0°C) 15 - 15°F (-9.5°C) 20 - 20°F (-6.5°C) 25 - 25°F (-4.0°C) 30 - 30°F (-1.0°C) 35 - 35°F (1.5°C) 40 - 40°F (4.5°C) 45 - 45°F (7.0°C) 50 - 50°F (10.0°C) 55 - 55°F (13.0°C)	Only shown if outdoor temperature is available.
3rd Stage Heater Defrost Balance Point	0363	25	0, 5 - 55	0 - Disabled 5 - 5°F (-15.0°C) 10 - 10°F (-12.0°C) 15 - 15°F (-9.5°C) 20 - 20°F (-6.5°C) 25 - 25°F (-4.0°C) 30 - 30°F (-1.0°C) 35 - 35°F (1.5°C) 40 - 40°F (4.5°C) 45 - 45°F (7.0°C) 50 - 50°F (10.0°C) 55 - 55°F (13.0°C)	Only shown if outdoor temperature is available.
Defrost Heater Selection	0364		0 - 7	0 - None 1 - Aux1 2 - Aux2 3 - Aux3 4 - Aux1 and Aux2 5 - Aux2 and Aux3 6 - Aux1 and Aux3 7 - Aux1 and Aux2 and Aux3	Default will be preset to the maximum number of aux heat stages available. Only shown if Heater Defrost Balance Point(s) are disabled by selecting “0” in ISU 0361, 0362 and/or 0363.
Discharge Temperature Sensor	0365	E	E, 0, 1	E - Auto-Discover 0 - None 1 - Remote Sensor Installed	For future use. Leave at factory default setting “E”
Indoor Humidity Sensor	0370	1	0, 1, 2	0 - Disabled 1 - Internal sensor 2 - Remote sensor	
Indoor Humidification Control	0372	E, 0	E, 0, 1, 2	E - Auto-Discover 0 - Off 1 - Relative Humidity Setpoint 2 - Dewpoint Control	Auto-Discover will discover “0” Dewpoint Control with Frost Protection requires outdoor temperature sensor
Humidifier Fan Action	0374	2	1, 2	1 - Fan turns on with Humidifier 2 - Humidify only when Heat is on	Only visible when ISU 0372 enabled. Fan will run for 2 minutes after humidifier turns off.
Indoor Dehumidification Control	0380	1	0, 1, 4	0 - Off 1 - Integrated Temperature and Humidity Control - ITHC (RH Setpoint) 4 - American Standard Heating & Air Conditioning Droop (RH Setpoint)	Deadband limited when in Auto- Changeover Mode and ITHC is enabled. See “Dehumidification” on page 19.
Comfort-R™ Delay	0381	0	0, 1, 2	0 - No Delay 1 - Comfort-R™ 15 sec 2 - Comfort-R™ 30 sec	Only shown for non-variable speed indoor units
Dehumidification Maximum Droop	0383	1	1, 2, 3	1 - 1°F (0.5°C) 2 - 2.0°F (1.0°C) 3 - 3°F (1.5°C)	Only shown if ITHC is selected

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Table 4. Installer Setup Menu

Selection	Installer Setup Number (ISU)	Factory Setting	Choices		Comments
			Option	Description	
Dehumidification Airflow	0387	100	80 - 100	80 - 80% Airflow 85 - 85% Airflow 90 - 90% Airflow 95 - 95% Airflow 100 - 100% Airflow	Only shown for variable speed indoor units. See Advanced Features section for more information
American Standard Heating & Air Conditioning Proprietary Humidity Control	0388	1	0, 1	0 - Disabled 1 - Enabled	Not shown if ISU0380 is set to 0. See Advanced Features section for more information
Furnace Filter 1 Change Reminder	0500	E, 0	E, 0 - 14	E - Auto-Discover 0 - Disabled (reminder off) 1 - 10 run time days 2 - 30 run time days 3 - 60 run time days 4 - 90 run time days 5 - 120 run time days 6 - 180 run time days 7 - 270 run time days 8 - 365 run time days 9 - 30 continuous days 10 - 60 continuous days 11 - 90 continuous days 12 - 120 continuous days 13 - 180 continuous days 14 - 365 continuous days	When set to Auto-Discover (and the discovered value is not 0=disabled), the Comfort Control will display the filter timer value it receives from the AccuLink™ communicating filtering device on the More screen. To reset the filter timer of the AccuLink™ communicating filtering device, simply press the More key to access the filter timer value and then press the Reset key. If no AccuLink™ communicating filtering device has been discovered, the auto-discovered value will default to 0. When not set to Auto-Discover (and not set to 0=disabled), the Comfort Control will display its internal filter timer on the More screen. To reset the Comfort Control's internal timer, simply press the More key to access the filter timer value and then press the Reset key.

Table 4. Installer Setup Menu

Selection	Installer Setup Number (ISU)	Factory Setting	Choices		Comments
			Option	Description	
Furnace Filter 2 Change Reminder	0501	E, 0	E, 0 - 14	E - Auto-Discover 0 - Disabled (reminder off) 1 - 10 run time days 2 - 30 run time days 3 - 60 run time days 4 - 90 run time days 5 - 120 run time days 6 - 180 run time days 7 - 270 run time days 8 - 365 run time days 9 - 30 continuous days 10 - 60 continuous days 11 - 90 continuous days 12 - 120 continuous days 13 - 180 continuous days 14 - 365 continuous days	When set to Auto-Discover (and the discovered value is not 0=disabled), the Comfort Control will display the filter timer value it receives from the AccuLink™ communicating filtering device on the More screen. To reset the filter timer of the AccuLink™ communicating filtering device, simply press the More key to access the filter timer value and then press the Reset key. If no AccuLink™ communicating filtering device has been discovered, the auto-discovered value will default to 0. When not set to Auto-Discover (and not set to 0=disabled), the Comfort Control will display its internal filter timer on the More screen. To reset the Comfort Control's internal timer, simply press the More key to access the filter timer value and then press the Reset key.
Humidifier Pad Replacement Reminder	0510	E, 0	E, 0 - 3	E - Auto-Discover 0 - Disabled 1 - 90 continuous days (30 run time days) 2 - 180 continuous days (60 run time days) 3 - 365 continuous days (90 run time days)	When controlling humidifier settings, use run time days. Otherwise, use calendar days.
Adaptive Intelligent Recovery	0530	1	0, 1	0 - Conventional recovery is activated 1 - Adaptive Intelligent Recovery control is activated	Adaptive Recovery starts recovery early to reach setpoint by start of program period.
Number of Periods	0540	4	2, 4	2 - Two Periods available (Wake, Sleep) 4 - Four Periods available (Wake, Leave, Return, Sleep)	Selection applies to all days of the week. Not shown if nonprogrammable is selected.
Heat Temperature Range Stop	0600	90	50 - 90	Highest heating setpoint. Temperature range (1°F increments) of heating setpoint.	Shown in 1/2°C
Cool Temperature Range Stop	0610	60	60 - 99	Lowest cooling setpoint. Temperature range (1°F increments) of cooling setpoint.	Shown in 1/2°C
Minimum Noncompressor On Time	0620	3	0 - 15	Minimum number of minutes non-compressor (heat) equipment is on.	

Table 4. Installer Setup Menu

Selection	Installer Setup Number (ISU)	Factory Setting	Choices		Comments
			Option	Description	
Minimum Compressor On Time	0630	3	0 - 15	Minimum number of minutes compressor is on.	
Clock Format	0640	12	12, 24	12 - 12-hour clock format 24 - 24-hour clock format	
Extended Fan On Time Heat	0650	0	0, 30, 60, 90 or 120	Fan operation is extended 0, 30, 60, 90 or 120 seconds after call for heat ends.	Only shown for nonvariable speed indoor units.
Compressor Heat Blower Off Delay Profile	0651	5	0 - 5	0 - Disabled 1 - 0.5 min @ 35% 2 - 0.5 min @ 50% 3 - 1.5 min @ 50% 4 - 0.75 min @ 100% 5 - 1.5 min @ 100%	Only shown for variable speed indoor units.
Extended Fan on time control	0660	90	0, 30, 60, 90 or 120	Fan operation is extended 0, 30, 60, 90 or 120 seconds after call for cool ends.	Only shown for nonvariable speed indoor units.
Compressor Cool Blower Off Delay Profile	0661	5	0 - 5	0 - Disabled 1 - 0.5 min @ 35% 2 - 0.5 min @ 50% 3 - 1.5 min @ 50% 4 - 0.75 min @ 100% 5 - 1.5 min @ 100%	Only shown for variable speed indoor units.
Compressor Heat Fan On Delay Profile	0665	0	0, 1, 5, 10, 20, 30	0 - Disabled 1 - Enabled - 50% for 1 minute (V.S. only) 5 - 5 seconds 10 - 10 seconds 20 - 20 seconds 30 - 30 seconds	For Variable Speed indoor units: choices are 0 and 1. For Non-variable Speed indoor units: choices are 0, 5, 10, 20, and 30.
Compressor Cool Fan On Delay Profile	0667	0	0, 1, 5, 10, 20, 30	0 - Disabled 1 - Enabled - 50% for 1 minute (V.S. only) 5 - 5 seconds 10 - 10 seconds 20 - 20 seconds 30 - 30 seconds	For Variable Speed indoor units: choices are 0 and 1. For Non-variable Speed indoor units: choices are 0, 5, 10, 20, and 30.
Keypad Lockout	0670	0	0, 1, 2	0 - Unlocked keypad 1 - Partially locked keypad 2 - Fully locked keypad	Unlocked - all functions are available. Partially locked - only temperature up and down keys and ability to enter and modify installer setup mode are available. Fully locked - only ability to enter and modify installer setup mode are available.
Temperature Control in Heat	0680	2	1, 2, 3	1 - Less aggressive temperature control (could cause temperature undershoot) 2 - Standard temperature control in heating 3 - More aggressive temperature control (could cause temperature overshoot)	Applies to recovery ramp and use of auxiliary heat during recovery.

Table 4. Installer Setup Menu

Selection	Installer Setup Number (ISU)	Factory Setting	Choices		Comments
			Option	Description	
Temperature Control in Cool	0690	2	1, 2, 3	1 - Less aggressive temperature control (could cause temperature undershoot) 2 - Standard temperature control in cooling 3 - More aggressive temperature control (could cause temperature overshoot)	Applies to recovery ramp and use of cooling stages during recovery.
Temperature Display Offset	0700	0	-3, -2, -1, 0, 1, 2, 3	-3°F (-1.5°C) -2°F (-1.0°C) -1°F (-0.5°C) 0°F (0.0°C) 1°F (0.5°C) 2°F (1.0°C) 3°F (1.5°C)	
Humidity Display Offset	0701	0	-5, -4, -3, - 2, -1, 0, 1, 2, 3, 4, 5	-5% -4% -3% -2% -1% 0% 1% 2% 3% 4% 5%	
Reset Discovered Device	0706	0	0, 1	0 - No 1- Yes	Will clear the equipment change alert (Err 126 - see Alert Code Addendum, form 18-HD32D2-1/69-2009) by re-initializing Auto Discovery
Restore Factory Defaults	0710	0	0, 1	0 - No Comfort Control reset 1 - Resets all Installer Setup options to default values and resets schedule to default setting (Energy Star).	Only the calendar setting and time are retained.

OPERATION

Using the Comfort Control

System and Fan Settings

The System default setting is Heat, unless no Heat stage is discovered/configured. The fan default setting is Auto.

SYSTEM SETTINGS

Heat: Controls heating system.
Off: Heating and cooling are off.
Cool: Controls cooling system.
Auto: Automatically changes between heating and cooling systems, depending on indoor temperature. (See Installer Setup section.)
Em Heat: Compressor is locked out and auxiliary heat cycles to maintain temperature (Used only for heat pump systems with backup heat.) Maximum allowable emergency heat stages is 3.

FAN SETTINGS

Pressing the fan key selects whether the indoor fan motor runs in the On, Automatic, or Circulation mode. The fan setting can be programmed into the Comfort Control schedule for each period (Wake, Leave, Return, Sleep).

On: Fan runs continuously
Auto: Fan is automatically following the fan schedule. (See Fan Schedule section for more information.)
Circ: Circulation control will provide a variable circulation determined by the Adaptive Intelligent Circulation (AIC) algorithm running the fan between 20% and 60% of the time.

LED Indication

An LED indicator is located in the upper right corner of the Comfort Control. It is only visible when lighted:

- It indicates that there is an Alert.
- It indicates that the Comfort Control is in Discovery mode.

LED Indication

FILTER INDICATION

The Comfort Control can track up to two filter timers by total fan run time or calendar days. This feature can be used to tell the homeowner when to replace the Furnace filter or clean the Air Cleaner cells:

Select filter timer reset time:

Total Fan Run Time: the number of run time days for the filter timer to count down from: 0, 10, 30, 60, 90, 120, 180, 270, or 365 days. (One run time day represents 24 hours of continuous fan/system run time.)

Calendar Days: the number of days for the filter timer to count down from: 0, 30, 60, 90, 120, 180, or 365 days. To activate this feature, select a value other than 0 (disabled). See Owner's Guide for more detailed information.

Pre-programmed

Table 5 shows the Energy Star default program settings. See Owner's Guide for complete instructions on changing the program.

Table 5. Energy Star Default Program Settings

Period	Time	Heat Setpoint	Cool Setpoint	Fan Setting
Wake	6:00 AM	70°F (21°C)	78°F (25.5°C)	Auto
Leave	8:00 AM	62°F (16.5°C)	85°F (29.5°C)	Auto
Return	6:00 PM	70°F (21°C)	78°F (25.5°C)	Auto
Sleep	10:00 PM	62°F (16.5°C)	82°F (28°C)	Auto

Alert Code Numbers

The Comfort Control can receive Alert codes from any communicating equipment via the AccuLink™ bus. The Comfort Control will illuminate the Red "Service" LED and toggle between the main screen and a screen showing the Alert code number. When multiple Alert codes exist simultaneously, the display will cycle through each code (showing a maximum of the 5 most recent Alerts) and return to the main screen. See the Alert Code Addendum (form 18-HD32D2-1/69-2009) for a listing of all equipment Alert codes.

Equipment Damage Hazard. Minimum compressor off-time is bypassed during Installer System Test.

Avoid cycling compressor quickly. Observe compressor protection period.

System Checkout

Installer System Test

The Installer System Test mode is used to test the Comfort Control operation with HVAC equipment. See Table 7. System configuration determines which tests are available and the number of stages shown. While in System Test mode, the minimum off time is bypassed.

The Installer Test is part of the Installer Setup options. Enter Installer Setup screen and press the Down arrow key for quick access to the test selection(s).

NOTE: Changing tests will turn equipment off.

NOTE: Entering Installer Setup will turn equipment off.

NOTE: NOTE: Charge Assist™ mode not available during Installer System Tests.

NOTE: Test modes time out after 5 minutes.

Table 6. Installer System Tests

Selection	Installer Setup Number	Factory Setting	Choices		Comments
			Option	Description	
Installer Test Cool	Test 1	0	0, 1, 2, 3	0 - Cool is off 1 - Cool stage 1 2 - Cool stage 1, 2 3 - Cool stage 1, 2, 3	Not shown if ISU 0172 is set to 3 or if ISU0174 is set to 0. If Discharge Air Temperature Sensor is available, Press the More key to show the Discharge Air Temperature value.
Installer Test Fan	Test 2	0	0, 1	0 - Fan is off 1 - Fan on	Not shown if ISU 0172 is set to 3. If Discharge Air Temperature Sensor is available, Press the More key to show the Discharge Air Temperature value.

Table 6. Installer System Tests

Selection	Installer Setup Number	Factory Setting	Choices		Comments
			Option	Description	
Installer Test Heat	Test 3	0	0, 1, 2, 3, 4	0 - Heat is off 1 - Heat stage 1 2 - Heat stage 1, 2 3 - Heat stage 1, 2, 3 4 - Heat stage 1, 2, 3, 4	Not shown if ISU 0176 is set to 0. If Discharge Air Temperature Sensor is available, Press the More key to show the Discharge Air Temperature Air Value.
Installer Test Emergency Heat	Test 4	0	0, 1, 2, 3	0 - EmHeat is off 1 - EmHeat stage 1 2 - EmHeat stage 1, 2 3 - EmHeat stage 1, 2, 3	If Discharge Air Temperature Sensor is available, Press the More key to show the Discharge Air Temperature value. Available only if heat pump with auxiliary heat is selected.
Installer Test Humidifier	Test 5	0	0, 1	0 - Humidifier off 1 - Humidifier on	Not shown if ISU 0372 is set to 0. Fan will follow Hum setting.
Installer Test Dehumidification Function	Test 6	0	0, 1	0 - Dehumidifier off 1 - Dehumidifier on	Not shown if ISU 0380 is set to 0. Fan will follow DeHum setting.

ADVANCED FEATURES

Adjustable Continuous Air Flow

The Continuous Fan air flow is user adjustable from 25% to 100% in 5% increments either by entering the User Setup menu or the Installer Setup menu (see Table 4, ISU Number 0186).

NOTE: CONTINUOUS fan mode during COOLING operation may not be appropriate in humid climates. If the indoor air exceeds 60% relative humidity or simply feels uncomfortably humid, it is recommended that the fan only be used in the AUTO mode.

Control Response Rate

A set of more/ less aggressive Proportional-Integral control constants can be chosen to increase/decrease the responsiveness of the temperature control performance. Choosing a more aggressive rate may cause overshooting. Furthermore, selecting a less aggressive rate may result in undershooting.

Cycle Rate

Cycle rate is the selected number of system cycles per hour at 50% load. If the cycle rate were set to 3, each ON/OFF cycle would be 20 minutes long when operating at 50% load. The total ON and/or OFF times depends on the actual indoor space load. A shorter cycle rate may be desired for Heating mode to maintain tighter control to indoor setpoint. A longer cycle rate may be desired for Cooling mode to allow the system to remove moisture from the air and improve indoor comfort.

Auto Changeover

When the system mode is set to Auto, the control automatically switches between heating and cooling modes to maintain the desired comfort level.

Setpoint Deadband

The number of degrees separating Heating and Cooling setpoints is user adjustable from 2 to 9 degrees. When the control is set to Auto, and the cooling setpoint is changed to a cooler setpoint, the heating setpoint will also change to maintain the selected deadband. The same action occurs when the Heating setpoint is changed to a warmer temperature.

NOTE: The deadband is restricted to a range of 5 to 9 if ISU 0380 is set to Integrated Temperature and Humidity Control (ITHC).

Backlit Display

When continuous backlight is **disabled**, the liquid crystal display will illuminate only when a touchscreen key is pressed to improve visibility. The backlight stays on for 45 seconds after the last touch screen key press. When continuous backlight is **enabled**, the liquid crystal display will remain illuminated continuously. The display will dim to half brightness 45 seconds after the last touch screen key press.

Filter Reminders

The Comfort Control can track up to two filter timers by total fan run time or calendar days. When the preset timer(s) has expired to remind the homeowner that it is time to change the filter(s), “Change” then “Filter” will automatically flash. To reset either filter timer, simply press the More key to access the filter timer value and then press the Reset key. Once the timer has been reset,

the filter timer value can be viewed at any time by simply pressing the More key until the filter timer is displayed on the screen.

NOTE: Both the filter timers are auto discoverable ISU settings. If no AccuLink™ communicating filtering device has been discovered, the auto discovered value will default to 0. To enable one or both timers, change ISU 0500 and/or ISU 0501 to a value other than 0.

Fan Selections

Pressing the Fan key selects whether the indoor fan motor runs in the On, Automatic, or Circulation mode. In On mode, the fan motor runs continuously. The fan automatically follows the fan schedule in Automatic mode. Circulation control will provide a variable circulation determined by the Adaptive Intelligent Circulation (AIC) algorithm running the fan between 20% and 60% of the time. Each schedule period (Wake, Leave, Return, Sleep) can be programmed with a specific fan setting (On, Automatic, or Circulation).

Screen Locked

Locking the control's touch screen keys can help prevent unwanted tampering with or changing of control settings. The Comfort Control can either be fully locked or partially locked. Both options continuously display "Screen Locked" on the screen. Changing ISU Number 0670 to 0 will unlock the keys and "Screen Locked" will disappear.

Installer System Tests

The built in Installer System Test mode allows the servicer to quickly and easily test the Comfort Control's operation with HVAC equipment and makes diagnostic procedures a snap. System configuration determines which tests are available and the corresponding number of stages shown (see Table 7, Tests 1 - 6 for details).

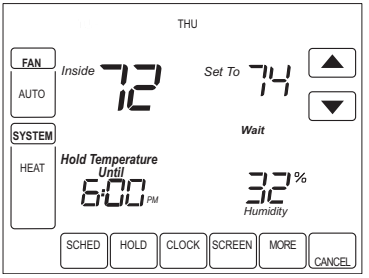
Default Factory Settings

The Comfort Control is shipped with a set of factory default settings. The factory default settings can be restored at any time using the Installer Setup menu (see Table 4, ISU Number 0710).

NOTE: Before you perform Auto-Discovery Mode (ISU Number 0710), is it recommended that you record all your user settings. All user setting choices will be reset to factory defaults in Auto-Discovery Mode.

Wait Indicator

"Wait" will be displayed when the setpoint is changed in the direction of calling for additional system capacity or the outdoor unit is in Charge Assist™ mode. "Wait" indicates system time delays are being enforced, and the control is adjusting to the new setting.



Calibrate Indoor Temperature

This option allows calibration of the room temperature sensor. The selected number is number of degrees, plus or minus, which will be added to the actual temperature. The number can range between +3 and -3 degree in 1-degree increments. Factory default is 0. The adjusted value will be used as the temperature for both display and control action.

Calibrate Indoor Humidity

This option allows calibration of the indoor humidity sensor. The selected number is percent relative humidity, plus or minus, which will be added to the actual indoor humidity. The number can range between +5% and -5% in 1% increments. Factory default is 0. The adjusted value will be used as the humidity for both display and control action.

Outdoor Temperature Sensor

For accuracy, the initial reading of the outdoor temperature sensor requires five minutes to stabilize. See the Sensor Instructions for installation information.

NOTE: If the device is using an outdoor sensor **for control** and the outdoor temperature sensor becomes unavailable, the display will show dashes "- -" and generate an Alert. If the device is not using an outdoor sensor **for control** and the outdoor temperature sensor becomes unavailable, no outdoor value will be displayed. The Comfort Control will not send an Alert.

Humidification

Indoor Humidification Control

This feature attempts to control the indoor humidity to the user's humidification setpoint using a humidifier. The humidification setpoint can range between 10% and 60% in 5% increments. When enabled, the default humidification setpoint is 50%.

Frost Control

The Frost Control requires an outdoor sensor and a humidifier. The Comfort Control calculates the possibility of condensation or frost forming by using the outside temperature and inside temperature to determine the dewpoint. When the dewpoint could cause frost or condensation, the humidification request will not be honored.

The Frost Setting can be accessed by pressing the More key until the Frost Setting is displayed on the screen. It has a value range of 0 to 10, with 0 representing glass with poor insulation and 10 representing glass with perfect insulation. If the factory setting (5), results in too much condensation or frost on the windows, lower the setting. When the air seems too dry, raise the setting.

Dehumidification

Integrated Temperature and Humidity Control (ITHC)

The dehumidification control attempts to control the indoor humidity to the user's dehumidification setpoint by running the compressor. The dehumidification setpoint can be accessed by pressing the More key until the dehumidification setpoint is displayed on the screen. The setpoint can range between 40% and 80% in 5% increments. When enabled, the default dehumidification setpoint is 50%. In extremely high humidity conditions, the Comfort Control keeps the compressor running for up to 3°F (-1.7°C) below the temperature setpoint. It does this while trying to achieve the desired dehumidification setpoint and balancing that with the temperature setpoint. The maximum allowable dehumidification droop can be selected in ISU 0383.

American Standard Heating & Air Conditioning Droop

American Standard Heating & Air Conditioning Droop is a feature that cycles the compressor on to improve indoor comfort by removing moisture from the air. The Droop cycle is activated when the indoor humidity is above the user's dehumidification setpoint. When this function is active, the Comfort Control will control temperature at 1 or 2 degrees F below the cooling setpoint. The Droop cycle is deactivated when the indoor humidity drops below the user's dehumidification setpoint. If the indoor humidity sensor fails, the droop logic will always be enabled while in cooling mode.

Comfort-R™ Delay

When the indoor humidity is above the users dehumidification setpoint, Comfort-R™ Delay will remove humidity from the air by implementing a blower turn-on delay of 15 or 30 seconds to "pre-chill" the coil. Comfort-R™ Delay applies to non-variable speed indoor unit types only.

Dehumidification Airflow

During any dehumidification control option, a lower speed fan can be activated. The settings range from 80% to 100% in 5% increments (see Table 4, Installer Setup number 0387). The default dehumidification airflow is 100%.

American Standard Heating & Air Conditioning Proprietary Humidity Control

When enabled, this feature will disable any blower off delays and disable continuous fan mode when the indoor humidity is above the dehumidification setpoint. This will help prevent coil condensation from being evaporated back into the air stream.

NOTE: This feature, ISU 0388, is not shown unless some form of dehumidification control is selected.

NOTE: American Standard Heating & Air Conditioning Proprietary Humidity Control does not affect the fan operation when the fan setting at the comfort control is in Auto or Circ Modes.

Special Heat Pump Features

Auxiliary Heat Lockout Temperature

When an outdoor temperature sensor has been discovered/ enabled, none of the installed auxiliary heat stages will turn on during heating operation above the selected outdoor temperature. When the outdoor temperature is less than the auxiliary heat lockout temperature (ISU Number 0360), the Comfort Control may cycle the indoor heat on and off to satisfy the load. During defrost, this outdoor temperature setting is ignored and the defrost heater balance point outdoor temperature thresholds are used.

NOTE: For Dual Fuel applications, if the heat pump fails to maintain heat while the outdoor temperature is above the auxiliary lockout temperature, the furnace will be used until the setpoint is reached, at which time heat pump operation will resume.

Compressor Heat Lockout Temperature

When an outdoor temperature sensor has been discovered/ enabled, only the installed auxiliary heat stages will turn on during heating operation below the selected outdoor temperature. When the outdoor temperature is greater than the compressor heat lockout temperature (ISU Number 0350), the heat pump attempts to satisfy the load.
If the heat pump can not satisfy the load and the outdoor temperature is less than the compressor lockout temperature (ISU Number 0350), the Comfort Control will transition to auxiliary heat operation and will turn off the heat pump. During defrost, this outdoor temperature setting is ignored and the defrost heater balance point outdoor temperature thresholds are used.

NOTE: There is a 5°F deadband between the Compressor and auxiliary heat lockout temperatures.

Operation in Heat Mode

When the outdoor temperature is below the compressor lockout temperature, only the auxiliary heat operates. When the outdoor temperature is above the auxiliary lockout temperature, only the Compressor operates. See Figure 9. When the outdoor temperature is between the two temperatures, both the Compressor and auxiliary heat operate.

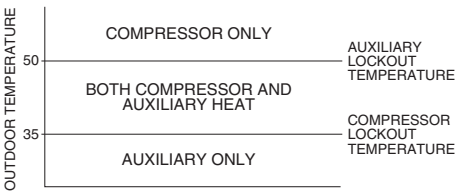


Fig. 9. Heat Pump Operation with Lockout Temperatures Set.

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Defrost Heater Balance Point Control

When an outdoor temperature sensor has been discovered/ enabled, a separate outdoor temperature turn-on threshold can be set for each installed heater stage during defrost in Installer Setup Numbers 0361 - 0363. If the balance point for a particular heater stage is disabled, that heater stage will be used during every defrost cycle independent of the outdoor temperature.

NOTE: NOTE: If the outdoor sensor is no longer reporting, all available heater stages will be used during defrost.

When an outdoor temperature sensor has not been discovered/enabled, the stage or combination of stages to be used during defrost can be set in Installer Setup Number 0364.

Operation in Emergency Heat Mode

When the Comfort Control is placed in Emergency Heat mode, the compressor and auxiliary lockout features are turned off. In the Emergency Heat mode, the compressor is locked out and only the auxiliary heat operates. The Comfort Control is capable of controlling up to a maximum of three Emergency Heat stages.

Heat Pump with Fossil Fuel Heat (Dual Fuel) and Outdoor Temperature Sensor

In this operation, there is no external fossil fuel kit (dual fuel kit) installed; the Comfort Control controls this function. During the transition between Furnace and heat pump operation, there is a minimum Comfort Control time delay of 45 seconds between the Furnace turning off and the heat pump turning on and 0 seconds between the heat pump turning off and the Furnace turning on.

NOTE: If the outdoor is missing or no longer reporting, the control algorithm will revert back to a fossil fuel only application.

For non-communicating equipment, configure the Comfort Control by:

1. Choose **Heat Pump Application** in Installer Setup Number 0172.
2. Choose **Fossil Fuel Option** as the backup heat source in Installer Setup Number 0200.
3. **Outdoor Temperature Sensor for Control Option** is automatically chosen in Installer Setup Number 0342.
4. Choose appropriate **Dual Fuel Heat Pump Control** in Installer Setup Number 0345.

NOTE: If the heat pump fails to maintain heat while the outdoor temperature is above the auxiliary lockout temperature, the Furnace will be used until the setpoint is reached, at which time heat pump operation will resume.

5. Choose appropriate **Compressor Lockout Temperature** in Installer Setup Number 0350.
6. If heat pump auxiliary lockout was selected in Installer Setup Number 0345, choose appropriate **Heat Pump Auxiliary Lockout Temperature** in Installer Setup Number 0360.
7. Choose appropriate **Defrost Balance Point Temperatures** in Installer Setup Numbers 0361 - 0363.

Heat Pump with Electric Auxiliary (Backup) Heat and Outdoor Temperature Sensor

For non-communicating equipment, configure the Comfort Control by:

1. Choose **Heat Pump Application** in Installer Setup
2. Choose Electric Option as the **Auxiliary (Backup) Heat Source** in Installer Setup Number 0200.
3. Choose appropriate **Outdoor Temperature Sensor for Control Option** in Installer Setup Number 0342.
4. If Outdoor Temperature Sensor was discovered/ enabled in Installer Setup Number 0342, choose appropriate **Compressor Lockout Temperature** in Installer Setup Number 0350.
5. If Outdoor Temperature Sensor was discovered/ enabled in Installer Setup Number 0342, choose appropriate **Heat Pump Auxiliary Lockout Temperature** in Installer Setup Number 0360.
6. If Outdoor Temperature Sensor was discovered/ enabled in Installer Setup Number 0342, choose appropriate **Defrost Balance Point Temperatures** in Installer Setup Numbers 0361 - 0363.

TROUBLESHOOTING GUIDE

Refer to Table 8 for troubleshooting information.

Table 7. Troubleshooting Information

Symptom	Possible Cause	Action
Red service LED is illuminated and the display alternates between Home screen and Alert Code screen.	Alert Code present	Refer to the Alert Code Addendum (form 18-HD32D2-1/69-2009).
Display will not come on.	1. Blown fuse or tripped circuit breaker. 2. Indoor unit power switch OFF. 3. Indoor unit blower compartment door or panel loose or not properly installed. 4. Wire broken/shorted; or R and D or B and D are reversed.	1. Replace fuse or reset breaker. 2. Turn power switch to ON. 3. Replace door panel in proper position to engage safety interlock or door switch on furnace. 4. Check R, B, D wiring.
Indoor temperature display is incorrect.	Temperature display needs calibration.	Calibrate Sensor - ISU 0700
Indoor humidity display is incorrect.	Indoor humidity display needs calibration.	Calibrate Sensor - ISU 0701
Outdoor temperature display shows “--” or the outdoor temperature is not displayed.	1. Outdoor temperature sensor open, shorted, not reporting, or not installed. 2. Outdoor sensor field wiring open or shorted.	1. Replace/Install outdoor sensor. 2. Check/repair outdoor sensor field wiring.
Indoor temperature display shows “--”.	Indoor temperature sensor open or shorted.	Replace control.
Temperature setting will not change (e.g. Cannot increase heating setpoint or reduce cooling setpoint).	1. Upper and/or lower temperature limits were reached. 2. Keys are fully locked. “Screen Locked” is displayed on LCD.	1. Check the temperature setpoints: Heating limits (ISU 0600) are 40°F - 90°F (4.4°C - 32.2°C). Cooling limits (ISU 0610) are 60°F - 99°F (15.5°C - 32.2°C). 2. Unlock keypad - ISU 0670.
Room temperature overshoots when the Heat/ Cool setting is changed more than 2 degrees.	1. Oversized heating/cooling equipment under current conditions. Control cannot respond fast enough to prevent overshooting. 2. Improper location of comfort control.	1. Set Control Response rate to “Aggressive” - ISU 0680, 0690 2. Select a location that prevents the Comfort Control from being directly exposed to air currents from supply registers.
Heating will not come on.	1. System Mode not set to Heat. 2. Minimum off time delay being enforced. 3. Loose connection to control or system. 4. Heating system may need service.	1. Set Mode to heat and raise the setpoint above room temperature. 2. If heating does not come on within 5 minutes, checking heating equipment. 3. Check/repair connections. 4. Repair system.
Cooing will not come on.	1. System Mode not set to Cool. 2. Minimum off time delay being enforced. 3. Loose connection to control or system. 4. Cooling system may need service.	1. Set Mode to cool and lower the setpoint above room temperature. 2. If cooling does not come on within 15 minutes, checking cooling equipment. 3. Check/repair connections. 4. Repair system.
Heat ON or Cool ON is displayed, but no warm air or cool air is coming from the registers.	1. The heating equipment turns on the fan when the furnace has warmed up. 2. Heating or cooling equipment is not operating.	1. Wait one minute after Heat ON is displayed and then check the registers. 2. Check Heating and/or Cooling equipment.
Control does not respond to keypad screen presses.	1. Keys are fully locked. “Screen Locked” is displayed on LCD. 2. Keypad failure.	1. Unlock keypad - ISU 0670. 2. Replace control.
Fan does not operate properly in heat or cool mode.	1. Heating or cooling equipment inoperative.	1. Repair system.

Table 7. Troubleshooting Information

Symptom	Possible Cause	Action
Fan runs all of the time.	1. Fan mode is set to ON - continuous. 2. Fan scheduled to run continuously. 3. Indoor equipment may need service.	1. Set fan mode to AUTO or CIRC. 2. Reprogram fan schedule, if desired. 3. Check Indoor equipment.
Fan is set to “On” but not running.	1. American Standard Heating & Air Conditioning Proprietary Humidity Control.	Verify that the Dehumidification setpoint is below the actual indoor humidity. See “American Standard Heating & Air Conditioning Proprietary Humidity Control” on page 19 for additional information.
Cooling cycles too fast or too slow (narrow or wide temperature swing).	The location of the control and/or the size of the cooling system may be influencing the cycle rate.	Verify/adjust cycle rates - ISU 0220, 0230.
Heating cycle too fast or too slow (narrow or wide temperature swing).	The location of the control and/or the size of the heating system may be influencing the cycle rate.	Verify/adjust cycle rates - ISU 0240, 0250, 0260.
Only Furnace heat; no heat pump heating in Dual Fuel mode.	1. Outdoor temperature sensor is missing or no longer reporting. 2. Outdoor temperature is below the Compressor Lockout Temperature setting.	1. Check/ repair outdoor sensor field wiring. 2. Lower the Compressor Lockout Temperature setting, if desired.
Cannot change system mode to Heat or Cool mode.	1. Comfort Control not configured properly.	1. Check/verify System Selection - ISU 0172.
No equipment is running and can not change the mode from “OFF”.	Equipment was not connected during Auto-Discovery mode.	1. Check/verify wiring connection and cycle power to components. 2. Cycle Power - System will Re-initiate Auto-Discover.

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